

**AMENDMENTS TO THE CLAIMS**

1 to 6. (canceled).

7. (currently amended): A polynucleotide encoding an immunologically effective detoxified ~~fragment of an~~ *E. coli* heat labile toxin (LT-A) polypeptide, wherein the polypeptide comprises ~~comprising (i) at least 8 contiguous amino acid residues of SEQ ID NO:1, and further wherein and (ii) the amino acid residue corresponding to Ala-72 of SEQ ID NO:1, and wherein said amino acid residue corresponding to Ala-72 is an arginine residue.~~

8. (previously presented): The polynucleotide of claim 7 further comprising a sequence encoding a second immunogenic antigen.

9. (previously presented): The polynucleotide of claim 8 wherein the second immunogenic antigen comprises a subunit B of an *E. coli* heat labile toxin (LT-B).

10. (previously presented): The polynucleotide of claim 9, wherein the LT-A and LT-B are encoded in a polycistronic unit.

11. (previously presented): An expression vector comprising the polynucleotide of claim 7.

12. (previously presented): An expression vector comprising the polynucleotide of claim 8.

13. (previously presented): An expression vector comprising the polynucleotide of claim 9.

14. (previously presented): An expression vector comprising the polynucleotide of claim 10.

15. (previously presented): A host cell comprising the expression vector of claim 11.

16. (previously presented): A host cell comprising the expression vector of claim 12.

17. (previously presented): A host cell comprising the expression vector of claim 13.

18. (previously presented): A host cell comprising the expression vector of claim 14.
19. (previously presented): The host cell of claim 15, wherein the host cell is selected from the group consisting of a bacterium, a mammalian cell, a baculovirus, an insect cell and a yeast cell.
20. (previously presented): The host cell of claim 19, wherein the host cell is *E. coli*.
21. (previously presented): The host cell of claim 19, wherein the host cell is a mammalian cell.
22. (previously presented): The host cell of claim 19, wherein the host cell is an insect cell.
23. (previously presented): The host cell of claim 19, wherein the host cell is a yeast cell.
24. (previously presented): The host cell of claim 19, wherein the host cell produces the amino acid sequence intracellularly.
25. (previously presented): The host cell of claim 19, wherein the host cell secretes the amino acid sequence.
26. (previously presented): The *E. coli* host cell of claim 20, wherein the host cell is mutated to produce a phenotype lacking wild type LT-A.
27. (previously presented): A method of producing a recombinant protein comprising:  
(a) providing a population of host cells according to claim 15; and  
(b) culturing said population of cells under conditions whereby the LT-A or fragment thereof encoded by the polynucleotide in said expression vector is expressed.
28. (previously presented): A method of producing a recombinant protein comprising:  
(a) providing a population of host cells according to claim 17; and  
(b) culturing said population of cells under conditions whereby the LT-A or fragment thereof and the LT-B encoded by the polynucleotide in said expression vector is expressed.

29. (previously presented): A method of producing a recombinant protein comprising:

- (a) providing a population of host cells according to claim 26; and
- (b) culturing said population of cells under conditions whereby the LT-A or fragment thereof encoded by the polynucleotide in said expression vector is expressed.

30. (withdrawn): A polynucleotide encoding an immunologically effective detoxified ~~fragment of an~~ *E. coli* heat labile toxin (LT-A) polypeptide, wherein the polypeptide comprises ~~comprising (i) at least 8 contiguous amino acid residues of SEQ ID NO:2, and further wherein and~~ (ii) the amino acid residue corresponding to Ala-72 of SEQ ID NO:2, ~~and wherein said amino acid residue corresponding to Ala-72~~ is an arginine residue.

31. (withdrawn): A polynucleotide encoding an immunologically effective detoxified ~~fragment of an~~ *E. coli* heat labile toxin (LT-A) polypeptide, wherein the polypeptide comprises ~~comprising (i) at least 8 contiguous amino acid residues of SEQ ID NO:3, and further wherein and~~ (ii) the amino acid residue corresponding to Ala-72 of SEQ ID NO:3, ~~and wherein said amino acid residue corresponding to Ala-72~~ is an arginine residue.

32. (withdrawn): A polynucleotide encoding an immunologically effective detoxified ~~fragment of an~~ *E. coli* heat labile toxin (LT-A) polypeptide, wherein the polypeptide comprises ~~comprising (i) at least 8 contiguous amino acid residues of SEQ ID NO:4, and further wherein and~~ (ii) the amino acid residue corresponding to Ala-72 of SEQ ID NO:4, ~~and wherein said amino acid residue corresponding to Ala-72~~ is an arginine residue.